



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



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No. MS/OTFM/22-ORI/BHU/2017-18

दिनांक / Date: 18.10.2017

To

Shri Pratap Patra, Mines Agent,
Maliparbat Bauxite Mines, Mines Division,
42/1041, Satya Nagar, College Road,
Semiliguda, Koraput-764036, Odisha.

Sub: Approval of Review of Mining Plan along with Progressive Mine Closure Plan of Maliparbat Bauxite Mines over an area of 268.11 ha in Koraput district of Odisha of M/s Hindalco Industries Limited submitted under Rule-17 of MCR, 2016.

Ref: - i) Your letter no. HIL/SEM/IBM/17-18/27 dated 27.09.2017.
ii) This office letter of even no. dated 03.10.2017.
iii) This office letter of even no. dated 03.10.2017 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

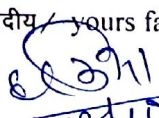
Sir,

This has reference to the letters cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 15.10.2017 by Shri Ramkishan R, Sr. Asst. Controller of Mines. The deficiencies observed are enclosed herewith as Annexure-I.

You are advised to carry out the necessary modifications in the draft Review of Mining Plan in the light of the contents vide Annexure-I and submit **three (3) firm bound and two (2) soft copies of the document text in CD in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format and JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR' 2017 within 15 (fifteen) days from the date of issue of this letter for further necessary action. If the total page of annexures exceeds 50 (Fifty) then it should be submitted as separate volume. But reference of these annexures must appear in the Review of Mining Plan document.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Review of Mining Plan will be considered for rejection if not submitted within above due date. It may also be noted that if the deficiencies are not attended completely, the submission would be liable for rejection without further correspondence.

भवदीय / yours faithfully,


(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Scrutiny comments in respect of Review of Mining Plan of Maliparbat Bauxite Mine of M/s Hindalco Industries Limited in district Koraput of Odisha

Text:

GENERAL

1. In the review of earlier approved plan deviation of all proposed individual year wise programmes should be given. Cumulative for 5 years given is not accepted. Justification for not achieving the targets is stated as directives of the district authority, so documentary evidence should be enclosed.
2. All annexures & chapters should be properly indexed.
3. DGPS survey carried out by ORASC and authenticated by competent authority should be submitted. The DGPS coordinates of the lease area should be furnished.
4. List of board of directors and resolution of nominated owner should be furnished.
5. Authenticated lease map enclosed is not legible so enclose the same with detailed land schedule signed by competent authority.
6. Photographs of lease area features shall be annexed.
7. The details regarding, CTO and other statutory clearances obtained should also be furnished.
8. Sequence of para as per IBM Manual appraisal MP 2014 has not been covered in text. All the headings and tables as mentioned in the IBM Manual appraisal MP 2014 should be furnished in all chapters in the text.
9. Summary of proposal at a glance may be furnished before "Introduction" chapter covering Exploration, Excavation, Area Utilization, Stacking, Environmental Protective Measures etc."
10. The extent and nature of surface right being held by the Lessee to carry out various mining activities be indicated with documentary evidence.
11. "Mineral Conservation and Development Rules 1988" to be replaced with "Mineral Conservation and Development Rules 2017" in the content of different parts of the text. The reference quoted at MCDR 1988 may be replaced with relevant rules under MCDR, 2017.
12. The mine is captive or non-captive shall be furnished with relevant documents in introduction.
13. The qualification and experience of QPs should be enclosed as per the rule 15 of MCR, 2016.

GEOLOGY AND RESERVE

14. Only 9 boreholes were drilled in the lease area, but reserves and resources estimated were in the area where no exploration was carried out. So as per MEMC, 2015 rules reserves and resources should be re estimated as discussed during the field inspection. UNFC categories should also modified accordingly. The parameters like percentage of waste generation, saleable ore, sub grade ore should be mentioned with proper justification. Core bore holes should be proposed.
15. The details like potentially mineralized area for Bauxite and its extent (coordinate in WGS 84), potentially mineralized area explored (Govt. land, Pvt. land etc.), remaining area, proposal of exploration to explore remaining potentially mineralized area to be given with justification of adequacy in accordance with MEMC 2015 rules.
16. Reporting of Mineral Resources in the format prescribed in Part IV-A of Minerals (Evidence of Mineral Contents) Rules, 2015 to be submitted. Recovery factor while estimating the Bauxite ore reserves/ resources from mineralised zone should be dealt with. Reserves and resources should be estimated up to the proven depth only. Sub grade mineral estimated should be justified properly.
17. The potential mineralised area and non-mineralised area is divided without any proper exploration of the entire lease area. So mineralised and non-mineralised area should be divided based on the current level of exploration only and UNFC categorisation area should be furnished with justification of level of exploration. The explored areas with mineralisation, non-mineralisation and unexplored areas should be categorised in different land types which should also be reflected in relevant plan and sections. Final reserves and resources should be consolidated in only table as per UNFC.
18. The UNFC boundaries as per the present status of exploration under MEMC rules 2015 may be demarcated over the Geological Plan and Sections.
19. The depth of the proposed boreholes should be adequate enough to justify the lateral and depth extension of the ore zone along and across the section lines up to the end of mineralization considering the geology and nature of ore deposit. Some infilling boreholes should be proposed between the already drilled boreholes so that boreholes should end beyond mineralisation depth.

20. In the Geological sections, the UPL and benches should be drawn properly. The UNFC boundary/code may be shown properly. The proposed and the existing boreholes details should also be depicted. A summary of exploration conducted in the lease area as per UNFC norms should be furnished in the following table.

Total Lease area:						
Item of information	Lease area explored as per UNFC norms (in Ha) as on dt.					Remarks/Comments including reasons for not carrying out the exploration as per UNFC norms.
	Total Lease area = A+B+C+D+E					
	G1 Level	G2 Level	G3 Level	Explored and found non-mineralized with level of exploration (Remarks)	Unexplored lease area	
	A	B	C	D	E	
Area as per level of exploration						
No. of BH Drilled						
No. of BH considered for Resource Estimation.						
Meterage Drilled						
Grid Interval						
Scale of Mapping						
Reserve estimated after above exploration as on dated :						
Remaining Resource after above exploration as on dated:						
Total Reserve/Resource after above exploration as on dated:						

21. The proposal for future exploration program should be furnished in tabular format so that the entire mining lease area should be explored under G1/G2 level of exploration indicating proposed borehole number, section line, coordinates, proposed depth, inclination, year of drilling etc. accordingly the proposal of future exploration programme may be modified. The same should be reflected in relevant plan and sections.

22. The type of deposit of Bauxite as per MEMC 2015 rules may be clearly defined like bedded, regular, irregular deposit etc. the strike and dip parameters should be mentioned in the text and relevant plans and sections should be drawn accordingly.

23. Recovery and specific gravity / bulk density mentioned of Bauxite may be properly justified with documentary evidence.

24. As per guideline of "IBM manual on appraisal of Mining Plan 2014" at least 10% of total samples to be analyzed in accordance to BIS and reports from NABL accredited/Government Laboratory. Accordingly, the proposal should be given under future exploration programme.

MINING

25. Production proposal should be modified as per the re estimated reserves as discussed during the field inspection. Year wise overall slope angle with topography of the area may also be considered for while designing the quarry. Production table shall be furnished in the tabular form as per IBM manual of appraisal of mining plan 2014.

26. UPL should be modified as per the modified estimation of reserves / resources with current level of exploration. Grid location of existing and proposed working areas to be given for the proposed period. Quantum of production and development may be described year wise with no. of benches, mRL, depth of excavation, direction of advancement, location and cross-section area considered. The mRL at the end of each scheme period should be mentioned in a tabular format for every pit area proposed with dimensions and no of benches with height and width and grid location.

27. Geological Section wise of proposed ROM excavation quantity in for very year should be provided. Sections may be equally spaced so that the entire area proposed for excavation may cover.

28. The existing and proposed machineries should be furnished in a tabular form.

HANDLING OF MINERALS REJECT/ SUB-GRADE AND DISPOSAL OF WASTE

29. The tables as per IBM Manual appraisal MP 2014 should be furnished.

30. Information on mineralisation or non-mineralisation proved in the underlying area of all the proposed and existing dumps should be furnished.

31. Present and further, Build-up of dumps from year to year to be mentioned in text w.r.t. designed capacity of dumps, present accumulated quantities, bottom and top mRL of individual terrace, dump slope, individual terrace height, grid location and slope with description of method & manner of disposal of waste should be mentioned. Nature of dumps whether temporary or permanent should also be mentioned.

32. Some fines stack was not shown in the relevant plans and sections near to the quarry, so it should be shown. Adequate provision for Garland drain, retaining wall and other protective measures as required should be given keeping in view of the proposed dumps to prevent wash-off of material. The given proposals are may not be sufficient so review the same.

33. The existing and proposed stacks of mineral and waste over mineralised or non mineralised area to be specified. If it is on mineralised area undertaking should be given to re handle the same.

PROGRESSIVE MINE CLOSURE PLAN

34. Land use pattern of additional land requirement during scheme period should be provided year wise.

OTHERS

35. Contractual and departmental manpower may be specified. Existing and future employment may be elaborated like mine manager, mining engineer, geologist, skilled and semi- skilled etc.,

36. An organizational chart has to be provided for risk assessment study to whom communication to be made in case of any accident.

FINANCIAL ASSURANCE

37. The area calculated for FA needs to be reviewed once and DWG file needs to be submitted.

FEASIBILITY STUDY REPORT

38. Feasibility study report should be enclosed considering the Capital cost, Cash-flow forecast, Investment cost, Inflation forecast, Operating cost, Sensitivity studies, RR, IRR, NPV for the project life.

Plates:-

General:

39. All plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager, Mining Engineer and Mining Geologist as per provisions of MCDR, 2017 and MMR, 1961. All plans & sections prepared should follow the conventions mentioned under MMR 1961.

40. All plans and sections should show a scale a scale of the plan at least twenty five centimeters long and suitably subdivided. True and magnetic north should be depicted in all plans with date and variation.

41. The plans and sections submitted should bear the certificate that -the plans and sections are prepared based on the lease map authenticated by the state government.

42. Date of survey should be given on all plans and sections and signature should bear date of signature.

Surface Plan:

43. Surface right area should be shown on surface plan. Power transmission lines to be shown in the plan. All boundary pillars coordinate in UTM, Latitude and longitude to be shown in tabulated form on surface plan. Few pillars may be correlated with some permanent ground feature giving distance and direction.

44. Surface plan needs to be updated and all the drilled BH to be shown. Year wise proposed boreholes in relevant colors.
45. Safety zone should be marked in surface plan and all relevant plans and sections.

Geological Plan & Section:

46. In the Geological Plan and sections UNFC boundaries, UNFC codes, explored area, unexplored area, mineralised area, non-mineralised area should be divided in to different land type area, drilled boreholes till date and year wise proposed boreholes in relevant colors and legends to be shown.
47. The proposed boreholes to be plotted in dotted lines in Geological sections along with Collar Id, RL and proposed closing depth at the bottom of the borehole.
48. A separate plan called UNFC plan showing the Lease area, Forest-Non-forest and Diverted Forest boundary, UNFC boundaries, Surface right area, explored area, unexplored area, mineralized and non-mineralized area, UPL, already drilled boreholes in black color and year wise proposed boreholes in relevant colors to be submitted.
49. Data related to strike, dip, dip-direction etc. shown on the geological plans are inadequate. Some more data may be shown to understand the geology of the area. All the already drilled boreholes to be shown in all the relevant plans (Geological Plan, Surface plan, UNFC plan etc) and Geological sections. The year wise proposal for drilling to be shown in different contrasting color in both plans (Geological Plan, Surface plan, UNFC plan etc) and Geological sections. The year wise color of the boreholes proposed in Geological plan should match with the plotted proposed boreholes in Geological sections.
50. The index of the Geological plan and sections to be revised indicating the index for year wise drilling proposal, mineralized and non-mineralized boundary.

Development plan and Sections

51. Each year development proposal for different blocks should be shown separately in different color. Composite development plan and section to be submitted. Benches configuration should be shown for each year individually and plan and sections.
52. The sections may be equally spaced according to the excavation area so that the sections will cover the entire excavation area proposed.

Conceptual plan

53. All the dumps at the conceptual stage should be clearly marked with legend / name on the conceptual plan & sections.

Key plan

54. Approach road to the lease area should be shown.

55. Wind rose diagram should be shown

Environment plan

56. The proposed and existing environment protective measures to be shown in environment plan. The drainage pattern of the lease area also to be shown on the plan.

57. The Environment Plan as prepared should be satisfy the provision as laid down rule 32(5) (b) of MCDR, 2017.

58. The particulars with regard to items (ii), (iv) and (v) of Rule 32(5) (b) should be applicable only up to sixty meters beyond the boundary of lease area. The same should be demarcated in Environment plan.

Reclamation plan

59. Year wise proposal of dumping, stacks, afforestation, different proposals under PMCP like drains, retaining walls etc., using different colour codes for easy understanding may be shown.

ENCLOSURE:

60. Proper indexing of annexures needs to be done.